

**Exhibit 12 to Plaintiff's Response  
To Defendant's Motion for  
Summary Judgment**

INSURANCE INSTITUTE  
FOR HIGHWAY SAFETY

## Fatality Facts

### LARGE TRUCKS

2002

Based on their numbers on the road and the amount they travel, large trucks (tractor-trailers, single-unit trucks, and some cargo vans weighing more than 10,000 pounds) account for more than their share of highway deaths. Tractor-trailers have higher fatal crash rates per mile than passenger vehicles, although a higher percentage of their travel occurs on interstates, the safest roads.<sup>1</sup>

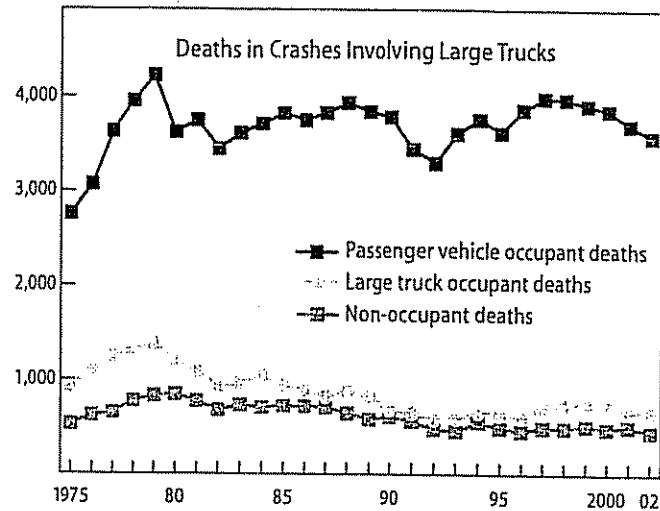
Large truck occupant deaths number about 700 annually. About 3,600-3,700 occupants of passenger vehicles die each year in collisions with large trucks; this amounts to more than one-fifth of all passenger vehicle occupant deaths in multiple-vehicle crashes. The main problem is the vulnerability of people traveling in smaller vehicles. Trucks often weigh 20-30 times as much as passenger cars.

Truck braking capability may be a factor in some crashes. Loaded tractor-trailers take 20-40 percent farther than cars to stop, and the discrepancy is greater when trailers are empty.<sup>2</sup> Of a representative sample of trucks inspected in 1996, 29 percent were ordered off the road because of serious vehicle defects, more than half of which were brake defects.<sup>3</sup> Antilock brakes help and were required on new tractors as of 1997 and new trailers as of 1998.<sup>4</sup> No reliable estimates are available of the extent to which defective brakes contribute to deaths and injuries in large truck crashes.

Drivers of large trucks currently are allowed by federal hours-of-service regulations to drive no more than 14 hours per day, but will allow up to 77 hours of driving over a 7-day period.<sup>5</sup> Surveys indicate that many drivers violate the regulations and work even longer hours.<sup>6,7</sup> Other studies show drivers are much more likely to crash after long hours behind the wheel.<sup>8-13</sup> The proportion of large truck crashes for which fatigue is a contributing factor is uncertain.

The following facts are based on analysis of data from the U.S. Department of Transportation's Fatality Analysis Reporting System:

- 4,805 people died in large truck crashes in 2002. Most of the deaths in large truck crashes are among people other than the truck occupants: 14 percent were truck occupants, 75 percent were people in cars and other passenger vehicles, and 10 percent were pedestrians, bicyclists, or motorcyclists.



Deaths in crashes involving large trucks			
	Passenger vehicle occupant deaths	Large truck occupant deaths	Non-Occupant Deaths
1975	2,757	916	528
1976	3,071	1,100	622
1977	3,631	1,229	653
1978	3,954	1,315	776
1979	4,226	1,372	830
1980	3,623	1,183	844
1981	3,752	1,082	772
1982	3,447	917	679
1983	3,615	960	732
1984	3,712	1,040	712
1985	3,825	941	724
1986	3,752	892	718
1987	3,833	821	712
1988	3,938	886	647
1989	3,847	822	587
1990	3,790	684	615
1991	3,447	650	562
1992	3,300	580	481
1993	3,611	590	462
1994	3,764	658	555
1995	3,625	634	495
1996	3,866	602	465
1997	3,990	717	497
1998	3,981	739	495
1999	3,916	747	519
2000	3,863	737	490
2001	3,709	691	513
2002	3,584	670	460



Deaths in large truck crashes							
	Tractor-trailer occupants	Single-unit truck occupants	Truck type unknown	Passenger vehicle occupants	Other or unknown vehicle	Non-occupant deaths	Total
1975	660	162	94	2,757	104	528	4,305
1976	809	291	0	3,071	100	622	4,893
1977	915	231	83	3,631	101	653	5,614
1978	968	251	96	3,954	115	776	6,160
1979	1,008	282	82	4,226	111	830	6,539
1980	867	234	82	3,623	90	844	5,740
1981	832	186	64	3,752	74	772	5,680
1982	720	141	56	3,447	82	679	5,125
1983	733	132	95	3,615	97	732	5,404
1984	853	125	62	3,712	86	712	5,550
1985	747	123	71	3,825	123	724	5,613
1986	689	139	64	3,752	106	718	5,468
1987	654	112	55	3,833	105	712	5,471
1988	706	119	61	3,938	95	647	5,566
1989	643	116	63	3,847	104	587	5,360
1990	503	126	55	3,790	85	615	5,174
1991	448	130	72	3,447	69	562	4,728
1992	412	136	32	3,300	61	481	4,422
1993	423	142	25	3,611	115	462	4,778
1994	453	165	40	3,764	92	555	5,069
1995	443	168	23	3,625	80	495	4,834
1996	426	149	27	3,866	115	465	5,048
1997	481	196	40	3,990	91	497	5,295
1998	501	212	26	3,981	101	495	5,316
1999	539	187	21	3,916	117	519	5,299
2000	514	214	9	3,863	83	490	5,173
2001	475	209	7	3,709	99	513	5,012
2002	465	198	7	3,584	91	460	4,805

- Ninety-eight percent of people killed in two-vehicle crashes involving a passenger vehicle and a large truck in 2002 were occupants of the passenger vehicles.
- Since 1979, when large truck crash deaths were at an all-time high, they have declined 27 percent overall, but there has been a greater percentage decline among occupants of large trucks (51 percent among occupants of large trucks compared with 15 percent among passenger vehicle occupants).
- Large truck crash deaths have declined each year since 1998; deaths in 2002 were 10 percent lower than 1998.
- When occupants of large trucks die in multiple-vehicle crashes, more than half of these deaths are in collisions involving another large truck. Of the 239 truck occupant deaths in multiple-vehicle crashes during 2002, 64 percent of them were in crashes that involved another large truck.
- Large trucks accounted for 3 percent of registered vehicles and 7 percent of miles driven in 2001.<sup>1</sup> They were involved in 11 percent of all passenger vehicle occupant deaths in 2002 and 21 percent of passenger vehicle occupant deaths in multiple-vehicle crashes.
- Single-unit trucks were involved in 27 percent of large truck crash deaths in 2002, and tractor-trailers were involved in 74 percent.
- Fifty-nine percent of deaths in large truck crashes in 2002 occurred on major roads other than freeways, 30 percent occurred on freeways, 11 percent occurred on minor roads, and 1 percent occurred on unknown road types.

## COMPARISON OF LARGE TRUCKS AND PASSENGER VEHICLES INVOLVED IN FATAL CRASHES

- In 2002, a total of 590 large trucks involved in fatal crashes rolled over. Compared with passenger vehicles, a higher percentage of occupant deaths in large trucks occur in rollover crashes. In 2002, 54 percent of deaths among occupants of large trucks occurred in crashes in which their vehicle rolled over, compared with 33 percent of passenger vehicle occupant deaths.
- Single-vehicle crashes were responsible for most deaths (64 percent) among occupants of large trucks in 2002, compared with 48 percent of passenger vehicle occupant deaths.
- Among vehicles in fatal crashes during 2002, 84 percent of large trucks and 61 percent of passenger vehicles were involved in crashes of 2 or more vehicles.

Vehicles in fatal crashes by number of vehicles in crash—large trucks compared with passenger vehicles, 2002				
	Large trucks		Passenger vehicles	
	Number	Percent	Number	Percent
Single-vehicle crashes	712	16	18,887	39
Two vehicle crashes	2,810	63	22,118	46
Crashes with >2 vehicles	929	21	7,165	15
Total	4,451	100	48,170	100

Deaths in large truck crashes by truck configuration, 2002	
Tractor-trailer	3,568
Single-unit truck	1,303
Unknown truck configuration	39
Total	4,805

Note: Total is less than sum of deaths because deaths in crashes with more than one truck type are counted once.

Deaths in large truck crashes by highway type, 2002					
	Freeways	Other major roads	Minor roads	Unknown	Total
Single-vehicle crashes	181	184	62	4	431
Multiple-vehicle crashes	1,073	2,404	327	19	3,823
Crashes with pedestrians, bicyclists, motorcyclists	127	219	112	2	460
Other/unknown	46	38	6	1	91

- In contrast with passenger vehicle drivers, drivers of large trucks killed in fatal crashes rarely have high blood alcohol concentrations. Six percent of fatally injured tractor-trailer drivers in 2002 had blood alcohol concentrations at or above 0.08 percent. This percentage has fallen since 1982, when it was 16 percent. Truck drivers are subject to strict regulations concerning drinking and driving.
- Most large truck crash deaths occur during the day (6 a.m. to 6 p.m.). Fewer occur on Saturday or Sunday than on individual weekdays. These patterns differ from those of total passenger vehicle occupant deaths, of which a much higher proportion occur on weekends (35 percent) and at night (49 percent).

Distribution of deaths in large truck crashes by day of week, 2002	
	Percent
Sunday	7
Monday	16
Tuesday	16
Wednesday	17
Thursday	16
Friday	18
Saturday	9

Distribution of deaths in large truck crashes by time of day, 2002	
	Percent
Midnight – 3 am	8
3 am – 6 am	9
6 am – 9 am	15
9 am – Noon	17
Noon – 3 pm	19
3 pm – 6 pm	15
6 pm – 9 pm	9
9 pm – Midnight	8

## REFERENCES

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- <sup>2</sup> National Highway Traffic Safety Administration. 1987. Heavy truck safety study. Report no. DOT HS 807 109. Washington, DC: U.S. Department of Transportation.
- <sup>3</sup> Federal Highway Administration. 1998. National fleet safety survey, 1996. Report no. FHWA MC 98 015. Washington, DC: U.S. Department of Transportation.
- <sup>4</sup> Federal Highway Administration. Parts and accessories necessary for safe operation; antilock brake systems. 49 CFR Part 393. Washington, DC: U.S. Department of Transportation.
- <sup>5</sup> Federal Motor Carrier Safety Administration. 49 CFR Parts 385, 390, and 395. Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations; Final Rule. 68 FR 22456 (April 28, 2003).
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ANNUAL VEHICLE DISTANCE TRAVELED IN MILES AND RELATED DATA - 2000 1/  
BY HIGHWAY CATEGORY AND VEHICLE TYPE

October 2001

TABLE VM-1

YEAR	ITEM	PASSENGER CARS	MOTOR-CYCLES	BUSES	OTHER 2-AXLE 4-TIRE VEHICLES 2/	SINGLE-UNIT 2-AXLE 6-TIRE OR MORE TRUCKS 3/	COMBINATION TRUCKS	SUBTOTALS			ALL MOTOR VEHICLES
								PASSENGER CARS AND OTHER 2-AXLE 4-TIRE VEHICLES	PASSENGER CARS AND OTHER 2-AXLE 4-TIRE VEHICLES	SINGLE-UNIT 2-AXLE 6-TIRE OR MORE AND COMBINATION TRUCKS	
<b>Motor-Vehicle Travel: (millions of vehicle-miles)</b>											
2000	Interstate Rural	134,857	1,167	981	79,318	8,260	44,377	214,175	52,637	268,960	
1999	130,856	1,100	971	76,190	8,073	42,976	207,046	51,049	260,166		
2000	Other Arterial Rural	234,726	1,680	1,270	141,247	13,643	28,003	375,973	41,946	420,569	
1999	231,117	1,662	1,375	138,475	13,978	26,713	369,592	40,591	413,320		
2000	Other Rural	224,784	1,667	2,247	140,386	13,759	12,569	365,170	26,548	395,432	
1999	222,752	1,686	2,321	136,993	13,965	12,236	359,785	26,201	389,993		
2000	All Rural	594,367	4,514	4,498	360,951	35,662	84,969	955,318	120,531	1,084,961	
1999	584,755	4,448	4,667	351,658	36,016	81,925	936,423	117,941	1,063,479		
2000	Interstate Urban	230,578	1,692	791	128,328	8,719	23,472	358,506	32,191	393,580	
1999	224,132	1,650	752	124,399	8,494	23,792	348,531	32,286	383,259		
2000	Other Urban	776,969	4,273	2,312	434,739	26,202	26,767	1,211,708	52,969	1,271,262	
1999	760,203	4,446	2,243	424,965	25,794	26,667	1,195,168	52,461	1,244,318		
2000	All Urban 4/	1,007,547	5,965	3,103	563,067	34,921	50,239	1,570,614	85,160	1,664,842	
1999	984,335	6,136	2,985	549,364	34,288	50,459	1,553,699	84,747	1,627,577		
2000	Total Rural and Urban	1,601,914	10,479	7,601	924,018	70,563	135,208	2,525,932	205,791	2,749,803	
1999	1,565,100	10,584	7,682	901,022	70,304	132,384	2,470,122	202,688	2,691,056		
2000	Number of motor vehicles registered 5/	133,621,420	4,346,068	746,125	79,084,979	5,926,030	2,096,619	212,706,399	8,022,649	225,821,241	
1999	132,432,044	4,152,433	728,777	75,356,376	5,762,864	2,028,562	207,788,420	7,791,426	220,461,056		
2000	Average miles traveled per vehicle	11,988	2,411	10,187	11,684	11,911	64,489	11,875	25,651	12,177	
1999	11,848	2,549	10,514	11,957	12,199	65,260	11,888	26,014	26,014	12,206	
2000	Person-miles of travel 6/	2,547,044	11,527	161,152	1,469,189	70,583	135,206	4,016,233	205,791	4,334,703	
1999	2,494,870	11,642	162,445	1,432,625	70,304	132,384	3,927,495	202,688	4,304,270		
2000	Fuel consumed 7/	72,975,503	209,580	1,110,235	52,831,511	9,546,300	25,645,067	125,747,014	35,193,367	162,250,196	
1999	73,282,927	211,680	1,148,307	52,859,058	9,372,071	24,537,320	126,141,995	33,909,391	161,411,373		
2000	Average fuel consumption per vehicle (gallons) 7/	546	48	1,488	668	1,611	12,232	591	4,387	719	
1999	553	51	1,576	701	1,626	12,096	607	4,352	732		
2000	Average miles traveled per gallon of fuel consumed 7/	22.0	50.0	6.8	17.5	7.4	5.3	20.1	5.8	16.9	
1999		21.4	50.0	6.7	17.0	7.5	5.4	20.1	5.8	16.9	
								19.6	6.0	16.7	

1/ The 50 states and the District of Columbia report travel by highway category, number of motor vehicles registered, and total fuel consumed. The travel and fuel data by vehicle type and estimation procedures include use of the 1997 Census of Transportation Vehicle Inventory and Use Survey (VIUS) and independent analysis of light truck travel.

2/ Other 2-Axle 4-Tire Vehicles which are not passenger cars. These include vans, pickup trucks, and sportutility vehicles.

3/ Single-Unit 2-Axle 6-Tire or More Trucks on a single frame with at least two axles and six tires.

4/ Urban consists of travel on all roads and streets in urban places with 5,000 or greater population.

5/ Stratification of the truck figures is made by the FHWA based on State-supplied data and the 1997 VIUS. Combination trucks represent approximately the number of tractors with semi-trailer(s) as trailer(s).

6/ As estimated by the FHWA using the 1995 Nationwide Personal Transportation Survey (NPTS).

7/ Total fuel consumption figures are derived from state fuel tax records and reflect latest available data. Distribution by vehicle type is estimated by the FHWA based on miles per gallon for both diesel and gasoline powered vehicles using State-supplied data, the 1997 VIUS, and other sources as a baseline.